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WIRE AND ROPE TENSIONER

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(57)

A wire and rope tensioner is disclosed. The device is a single unit of moulded plastic. One end of the piece consists of two offset flanged spigots (figure 1; A and B) about which the wire or rope is wound. The other end of the piece consists of two parallel flanged spigots (figure 1 , C) which hold the device in place once the wire or rope is tensioned. This device is used to retension loose or sagging wire and rope. The wire or rope is engaged at points A and B, the device turned by manual effort so as to twist the wire or rope, and then the device locked into position at point C.

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AUSTRALIA
Patents Act 1990

COMPLETE SPECIFICATION
STANDARD PATENT

WIRE AND ROPE TENSIONER

The following statement is a full description of this invention, including the best method of performing it known to me:

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WIRE AND ROPE TENSIONER

This invention relates to an improved device for tensioning wire and rope that is sagging and has lost tension. It would be used singly on shorter lengths (say 30m or less) or in multiples for longer lengths.

I live on a small hobby farm of 30 acres. Because of the layout of the property many short lengths of barbed wire (~ 80) and longer lengths (~ 40) are necessary.

After tensioning it is not long before these wires begin to sag due to post movement or stock pressure and become unsightly and less effective.

To tension the wires you can either :

- i) undo each wire and tension by hand for shorter lengths or by a wire strainer for longer lengths.
- or ii) use existing devices that shorten the wire and so increase tension and reduce sag. These devices remain in situ.

The former involves problems in the time required and the fact you invariably end up poked, scratched and bleeding. The latter involves problems in that they are multi-component metal fabrications and are quite expensive.

The numerous short lengths of wire on my property discourage me from using either the former or latter methods.

These problems are overcome by this invention.

- The device is a single unit of moulded plastic. The plastic would be chosen and dimensioned so as to have the necessary strength to resist the shear and bending stresses, to resist environmental and stress degradation, and to maintain its rigidity and shape.

This invention provides a method for tensioning and tightening wires and ropes that is unavailable at present. The wire may be plain, barbed or twisted. The rope may be fibre or plastic.

Figure 1 shows a perspective of the device.

Figure 2 shows the device in operation.

- Figure 1 shows the device as a single moulded piece. The device is used to take up slack and tighten loose or sagging lines. The operator provides manual force and, by using mechanical advantage, wraps the line about the bearing surfaces of the device.

- Once the line is tightened, the device stays in situ and is supported by the line. Letters A and B show the bearing surfaces about which the line is wrapped and the flanges that contain the line. Letter C shows the flanged area where the device is held in place once the line is tensioned. Letter D shows the main body of the device which provides the lever arm that gives the mechanical advantage. The dimensions are indicative only and may be varied from these.

- Figure 2 shows the device in operation, tensioning a length of plain wire (say). Drawings A to B show the device before being turned through half a revolution. Drawing A shows the device in place before any turning moment is applied by the operator. Drawing B shows the device being turned clockwise with the arrow giving the approximate point of application of force by the operator. Drawing C shows this process continued. Drawing D shows the device in its "locked position" having tensioned the wire. In its present dimensions, approximately 50mm of slack would be taken up.

- 15 If required, the device can be "unlocked" and further rotated in the clockwise direction. It is "locked" in position in multiples of half a revolution. The drawing shows the device facing towards the reader for reasons of clarity. It can be faced the other way, in which case it would be rotated anti-clockwise to tension the wire.

- 20 In summary, this device provides a simple and quick method for tensioning wires and ropes. It removes the need for undoing an end of a line, re-tensioning and re-knotting to take up slack. Because it is a single unit of moulded plastic it would be inexpensive to manufacture and hence purchase price would be low.

The claims defining the invention are as follows :

1. A wire or rope tensioning device which is a single unit of moulded plastic which provides :
 - a) at one end a place to engage and twist the wire or rope between two offset spigots, and flanges on these spigots to contain the wire or rope,
 - b) at the other end a place to lock the device onto the tensioned wire or rope between parallel flanged spigots and
 - c) the body of the device between the two ends through which the lever action is manually provided by the operator.
2. A wire and rope tensioner substantially as here in described with reference to the accompanying drawings.

AN APPLICANT
N.B. Leete

18th January 1998

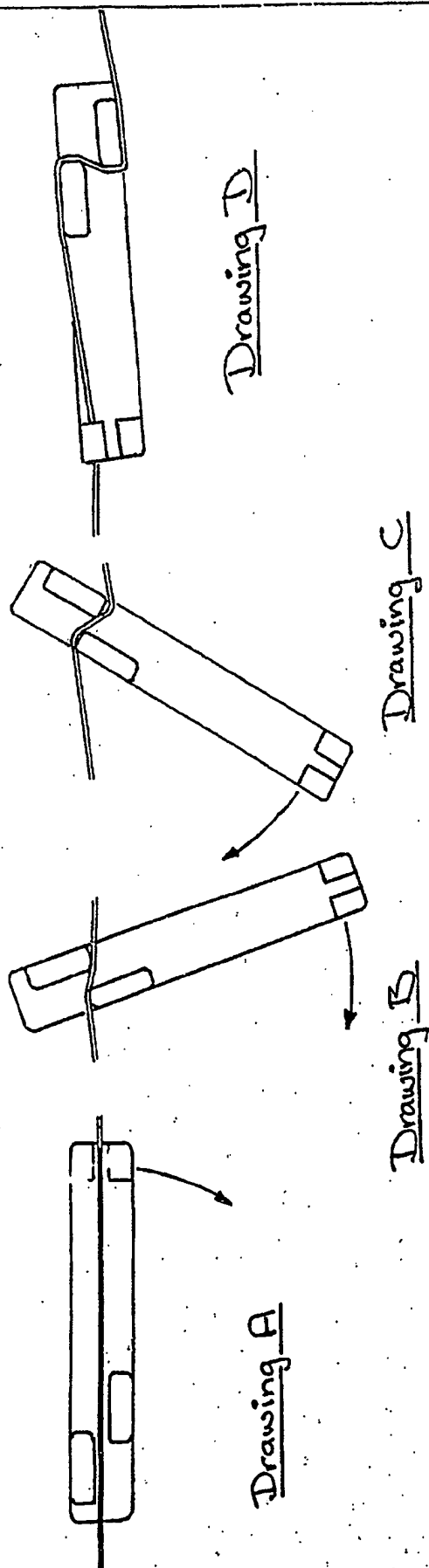
ABSTRACT

A wire and rope tensioner is disclosed. The device is a single unit of moulded plastic. One end of the piece consists of two offset flanged spigots (figure 1, A and B) about which the wire or rope is wound. The other end of the piece consists of two parallel flanged spigots (figure 1 , C) which hold the device in place once the wire or rope is tensioned. This device is used to retension loose or sagging wire and rope. The wire or rope is engaged at points A and B, the device turned by manual effort so as to twist the wire or rope, and then the device locked into position at point C.

The diagram shows an orthographic projection of a mechanical part with the following dimensions and features:

- Overall Dimensions:**
 - Total length: 210
 - Top flange width: 60
 - Bottom flange width: 60
 - Bottom flange thickness: 12
 - Top flange thickness: 20
 - Top flange hole diameter: 27
 - Top flange hole offset from left edge: 6
 - Top flange hole offset from right edge: 6
 - Top flange hole offset from front edge: 6
 - Top flange hole offset from back edge: 6
 - Top flange hole offset from bottom edge: 6
 - Top flange hole offset from top edge: 6
 - Top flange hole offset from side edge: 6
 - Top flange hole offset from front edge: 6
 - Top flange hole offset from back edge: 6
 - Top flange hole offset from bottom edge: 6
 - Top flange hole offset from top edge: 6
 - Top flange hole offset from side edge: 6
- Feature Labels:**
 - A:** Points to the top flange.
 - B:** Points to the top flange hole.
 - C:** Points to the top flange hole.
 - D:** Points to the top flange hole.
 - E:** Points to the bottom flange.
 - F:** Points to the bottom flange hole.

Dimensions in mm
Scale 1:1



Drawing D

Drawing C

Drawing B

Drawing A

FIGURE 2

Scale 1:3